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INQUIRIES RESPECTING FOOD.

SECOND ARTICLE.

THE facts adduced in the former paper on this subject went to show that, in the case of aged paupers, and individuals under confinement with light or no labour, a certain moderate amount of aliment is best fitted to preserve health. It was shown that aged paupers could live in a certain degree of healthiness when fed with about twenty ounces of solids (about two of these being animal food) per day, but, when this food was a little reduced, mortality was greatly increased amongst them; and also that, in a house where the same class of persons had about thirty ounces of solids (three of these being animal food) per day, a much greater mortality resulted. Other circumstances were mentioned, all of them tending to show, that, above a certain point in the supply of aliment, the increase was accompanied by a corresponding increase of sickness and mortality. These facts are of considerable importance to all classes. If there be a healthy medium for aged unemployed persons of the humbler order, there must be a healthy medium for individuals of every description, and in all imaginable circumstances. How far this medium is exceeded in the case of the non-operative and affluent classes, and how far they consequently, though unconsciously, become liable to that increase of sickness and mortality shown to take place in overfed prisoners and paupers, is well worthy of being investigated—though it is not our purpose now to occupy ourselves with these questions.* What we are for the present most anxious about is—How far the food of the labouring classes squares with the medium calculated to give the greatest amount of health in their peculiar circumstances.

Here, it must be observed in the first place, we have to deal with an order of men in the prime of life, and subject to considerable bodily exercise, in many cases in the open air, so that the waste in their systems, and the consequent demand for nutriment, must be considerably higher than in the class of aged and unemployed paupers. We have few data for

ascertaining the amount of solids constituting the healthy medium in their case. We are, however, assured by excellent authority, that the prisoners at hard labour in the Edinburgh Bridewell live healthily upon thirty-one ounces of solids per day.* Probably, if we take this as a fair medium for men working as prisoners, and make a small extra allowance for the exposure to fresh air, and the greater mental stimulus of free labourers, we shall reach a proper allowance for adults of the latter class in thirty-two or thirty-three ounces of solids per day, part of this being animal food.

We are now to inquire if the operative classes do generally enjoy this amount of aliment, or even the lower amount of twenty-two ounces. Here it is unfortunately out of our power to present a very large array of specific facts; but yet we hope, by one means and another, to give a certain degree of satisfaction on the subject. The rural labourers, who constitute a very large portion of the whole community—probably a fourth—fall to be first considered. In Scotland, they are divided into three classes—young men who board in the farm-house and receive wages, married men who live as cottars and receive certain allowances in food and money, and women who work in the fields at certain seasons for a stated weekly pittance. Of these, the first may be considered as upon the whole well off, seeing that their employers are in some measure obliged to see them properly fed.† But the married farm-servants and their families do not fare so well. They generally have, besides their wages, a free cottage and piece of garden ground, with a right of pasturing a cow: the whole, we have been informed, is usually calculated as equal to about eleven shillings a-week. They in most instances have what appears a sufficiency of food, but it is almost exclusively of oat and barley meal, potatoes, milk, and cheese. Animal food is almost unknown in their houses. A very small piece of the annually killed pig is taken now and then to help out their vegetable diet—probably once a-week at the utmost—while many cannot afford even to use their own pork, and consequently see butcher's meat only by accident. The ploughman submits to this fare with a marked appearance of patience and content, for resignation has been inculcated upon him from his earliest days as a religious duty, and he probably supposes that the whole question is whether or not his palate shall be gratified. But, though content, he suffers nevertheless; the labour, not supported by proper food, is in some measure taken out of his natural strength; and the consequence is, that he *breaks down*, as it is called, at a comparatively early period of life, and, becoming unfit any longer to act as a ploughman, is obliged to leave farm-service. He now becomes an occasional or day labourer, probably at the roads, where he does not realise nearly so much as before; or perhaps he is altogether unfit for work, and obliged to depend on

the kindness of his children, or the stinted allowance of the parish. At the best, he is a prematurely exhausted and infirm man, in a more or less helpless situation. The female field-labourers, when employed, earn only eightpence a-day—they necessarily live in as sparing a manner as the married men-servants, and are unable to provide any thing for the future. Accordingly, ceasing to be fit for work about fifty, they inevitably become destitute, and have to depend for the remainder of their lives upon the charity of their neighbours or a parochial allowance. The number of such poor women in almost every small rural town in Scotland, is distressing to think upon. Though unfit for active exertion, their good constitutions, and the healthy air of their locality, give them a tenacity to life which usually carries them through many years of extreme penury. They obtain food but in mouthfuls, but still it is enough to keep in life. Habitual piety, as in the other case, gives them resignation, and even cheerfulness; but this ought not to blind any enlightened or humane inquirer to the real nature of their situation. The fact is, they live in a condition to which that of most domestic animals is luxury. The parish rarely offers to such persons more than a shilling a-week, and that offer is also clogged with conditions, and its receipt made so intolerable to all honest feeling, that it is as often rejected as taken. Individuals, on the other hand, occasionally give some scraps from their table to succour these poor old women; but this succour is very trifling. Sometimes they earn a few pence by knitting a pair of stockings. On making some inquiries lately as to their mode of life, in a particular town, we found it altogether a mystery. Nothing like the usually understood means of supporting life could be traced as within their reach. We found that some had not seen white money for years—and this was within a few miles of a wealthy city. The only chance for such persons seems to be an acute illness, for then some little attention is apt to be paid to them. But, generally, this is not the nature of their ailments. They take "sore legs," glandular swellings, ulcerous complaints, and other severe maladies, the unavoidable consequence of poorness of living, and usually quite incurable, their blood being too thin to allow the constitution to rally. And thus they linger on from year to year, in a state very nearly parallel to that of the worn-out male-labourers, till death reluctantly puts an end to their sufferings. When we contemplate this distressing picture of the rural labouring class, how painful a contrast it seems to form with the spectacle of the cottage brood of rosy white-haired children, which meets the eye in every part of the country, as well as that presented by any collection of youthful rustics at their sports on the village green. Burns, somewhere describing the hardships of the cottager's life, says that, nevertheless,

Sturdy chieks and burdly hizzies
Are bred in sic a way as this is.

And it may be so. In childhood and youth, the condition of the rural class is not in general bad. Their food is of the light kind which agrees with the young, and all the other circumstances of their condition are healthy, and favourable to the development of great strength. But when they at length fall under the iron doom of severe labour, with unproportioned aliment, their case becomes very different; and the rosy children, athletic young men, and "burdly hizzies," come at length to be visited with severe and premature infirmities, and end by being as pitiable a spectacle, as they were originally a delightful one.

In England, according to the best knowledge we can gain, the condition of farm-labourers is not much different from what it is in Scotland. The stories which

* Overfeeding is not the only error to which persons in easy or comparatively easy circumstances are liable. Underfeeding is also, from various causes, by no means uncommon. Some, having the evils of excess very strongly impressed on their minds, run to the opposite extreme, particularly in the food which they order for their children. Others, from an undue desire of saving, pinch themselves and their families to an injurious extent. The pleasure of reflecting on their self-denial reconciles them to the privation, and they look no farther. These persons must be informed that the moral feeling will have no effect whatever in making up for the physical deficiency, or repairing its fatal consequences. They will get thin-blooded, and become liable to distressing ailments, and be cut off before their time, whether the privation be for a good or a bad end; nor will the saved money be of one-tenth the avail in patching them up, which it would have been in keeping them sound. Many persons, also, from a principle of self-denial, or other mistaken views, take too large a proportion of vegetable food, or adhere to it alone, and deny themselves variety. Now, all of man's teeth, except eight, are of the kind invariably found in animals which live on flesh; and the fair inference is, that he was in a large measure designed by nature to live on flesh too. He therefore contravenes nature, and subjects himself to all the appropriate punishments, if he does not eat flesh, and that in sufficient quantity. As for variety, it is perhaps one of the most important principles in dietetics. Nature itself points it out to us, by making a too frequent repetition of all except the simplest elements of diet disagreeable. Many things at one meal are not desirable, though neither is the principle of one dish altogether a sound one. What is wanted is a variation to a certain extent in the diet of one day from the diet of another day.* If this be attended to, a smaller quantity of food will preserve the same degree of health.

* The want of variety is a prevalent error in public asylums. The managers of such institutions might effect a great improvement in this respect, with little or no addition to the expense.

* On first entering the house, there is generally a slight falling off in the prisoners, apparently in consequence of the mere fact of the change. In a week or two, they settle into a very healthy state, and continue so generally for six months, when the confinement begins to affect them.

† In a southern district of Scotland, this class of farm-servants, having fourteen pounds a-year besides their board, are in general able to save a good deal of money, which they amass in banks, and which only their subsequent entrance upon the condition of matrimony dissipates. Cases are numerous of this class of men saving enough to stock small farms of their own, from which in time they advance to larger concerns, so that they ultimately take their place amongst the yeomen of the district. Indeed, a great number of the farmers of this district were originally farm-servants, or are the children of persons who were so.

are told of their frequent meals of bacon and solacing draughts of ale, refer to exceptions, not to the general rule. In harvest, and at other times when there is a pressure of work, the labourers may occasionally be treated in this manner; but the most of them live in cottages upon the same light fare as the Scottish married *kynds*. How can it be otherwise, for example, in the south of England, where the weekly wages of a farm-labourer rarely exceed ten, and sometimes are as low as eight and even seven shillings a-week? We had lately an opportunity of making personal inquiry into the subject in Cheshire, and satisfied ourselves that, in that district, the farm-labourer is as much a stranger to animal food (excepting milk), and lives in all other respects as poorly, and rears his family with as much difficulty, as the generality of the same class of men in the north. In 1833, when Mr Chadwick made the inquiries as to the food of convicts, soldiers, &c., which were specified in the former article, he found that the independent labourers enjoyed a much inferior amount of aliment—those within the range of his observation being enabled by their earnings to eat only 119 ounces of bread per week and three ounces of bacon—we presume, exclusively of the quantities required for a wife and average number of children. This is only at the rate of 174 ounces of solids per day—considerably less than what is given by the public to aged paupers who have nothing to do. It was a general point of evidence with those called before the Poor-Law Commissioners in 1833, that the poorer class of rate-payers fared much worse than the inmates of the workhouse, inasmuch that, when once any one got a taste of workhouse life, and found it so much better than his ordinary one, he could rarely be induced to leave that asylum. Mr Drouet, the resident governor of Lambeth Workhouse, stated this very strongly with reference to the people about Gosport. He said he had often seen the poor rate-payer dining on potatoes, and that for days together, while the paupers had a comparatively sumptuous dinner. The very poor rate-payers, he said, hardly ever think of such things as beer and butter, except on Sundays. "I have known," said he, "a rate-payer, if he is a poor agricultural man, go out in a morning, with a bottle of milk and a piece of bread (perhaps a pound) made of flour with the bran in it, and when he returned home, he would expect a supper of potatoes, with a little skimmed milk thrown over it; this skimmed milk was perhaps given him by the neighbouring farmer. This is common," adds Mr Drouet, "about Gosport, and also in Bedfordshire and Northamptonshire." From the various accounts kept by shopkeepers with agricultural labourers, which Mr Chadwick had seen, he drew the fact, that, supposing the children to eat meat as well as the parents, the amount of that kind of food to each was not above four ounces a-week at an average; a sum much below what is due to health even in children. When the physicians examined the children in the St Cuthbert's Workhouse, last summer, and found so many of them suffering under ophthalmia and other diseases, one of the features of defective diet which they laid most stress upon was their getting rather less than an ounce of animal food per day.

The large class of artisans, as they realise higher wages, ought to be much better off than the rural labourers, and no doubt most of them enjoy sufficient food, while others, from mismanagement of their earnings, do not live any better, or so well, and subject their systems, moreover, to much gratuitous injury, as it may be called, by their use of spirituous liquors. The skilled factory labourers are, in general, able to provide themselves with a sufficiency of food, and do so; but the unskilled, who are the larger number, obtaining much smaller wages, can scarcely be in the same situation. Here, accordingly, there must be the same privations, and the same premature decay, as amongst the overtasked and underfed of the rural population. Labourers connected with the arts and manufactures have, moreover, this additional disadvantage, that they generally live in dense clusters, and in comparatively unhealthy situations. Wherever they are, there is sure to be gathered a refuse of their own and of all other classes, the indescribable poor and abject of a large city. Amongst these, or amongst themselves, arise epidemic distempers, from which all alike suffer greatly; for that poorness of body, uncleanness, and density, which have occasioned the disease, also disable them for overcoming it.

There thus appears considerable reason to believe that, in the most numerous class of our community, that of the unskilled labourers, rural and manufac-

turing, *underfeeding* prevails to a great extent. It is very desirable that the fact were thoroughly ascertained by extensive inquiry, and that its consequences were traced in a philosophical spirit through the labyrinths of our social condition. But in the mean time it is scarce possible to doubt that the evil does largely exist, and not only in times of scarcity, but at all times. Neither can we be at a loss to catch a general sense of the many evils which flow from it. We see one of them in a sufficiently alarming form, when, during some severe winter, labour being arrested and food scarce, the demon Fever takes possession of a large city, and decimates the poorer of its inhabitants. To make more plain what we mean, we may advert to the city of Glasgow, where, in 1837, there were twenty-one thousand cases of dangerous fever, being just about a tenth of the inhabitants; and these mostly took place during a season of scarcity amongst the poor. When such epidemics arise, though they are first occasioned by deficient food and comfort, and first seize those who are so circumstanced, they readily spread to the well fed and well clothed, who, while socially separated by an immense gulf, cannot help being locally near. Then it is that we see lives fall, to redeem which, in the hour of peril, thousands would and could be given, as readily as the physician's fee—fathers snatched away from the midst of their youthful families, or sons or daughters, perhaps sole children, removed from the presence of the most loving of parents—all this from no failure in the individuals concerned to obey the laws of health, but merely because hordes of their fellow-creatures do not enjoy the aliment which nature has declared to be necessary. Nor are these the only evils which the wealthy or easy suffer from the co-existence of an underfed class. Where any large portion of the community is in this predicament, there must be moral as well as physical diseases. "The pressure of poverty," says an eminent writer, "is unfavourable to the growth of refinement and morality; and crime and turbulence are never so much to be dreaded as during times of scarcity, and manufacturing or agricultural distress. Bodily health, satisfied appetite, and peace of mind, are great promoters of individual morality and public tranquillity; and whenever these are encroached on in any great class of the community, discontent and crime are sure to follow. In legislation, this principle is seldom attended to, and laws are consequently enacted merely for the suppression of the result, while the source from which it springs is left altogether unnoticed, and in the fullest activity."* It may be added, that, where children are underfed, as they are in many public asylums, as well as in the houses of their indigent parents, a fourth and spreading evil results, for from these children afterwards arises a wider circle of human beings, who inherit their weakness of body and mind, and in turn give rise to still wider circles, characterised by the same imbecilities, and who are ever ready to become the recipients and communicators of epidemic disease.

To ascertain the healthy medium of aliment, and inquire if the people at large are fed up to that point, are philosophical matters which we have conceived ourselves at liberty to investigate. As far as we can judge of our own motives, we make these investigations in the spirit of science, and with the proper object of all science in our view, namely, the improvement of the happiness of the people. If we have produced any conviction in the public as to the two points in question, we must have done much good, for it is impossible that such a conviction can exist in so enlightened and so humane a community as that of Britain, without leading more or less immediately to good results. The forms of philanthropy in our country are numberless. A list of the charitable societies in London alone, is of wearisome length. The sick, the blind, the aged, are all cared for. The negroes in our colonies call up our sympathies. The aborigines of less intimately connected settlements are the subjects of benevolent feeling. There are even statutes to protect the sensations of beasts of burden. Can we doubt, in such circumstances, that a deficiency of aliment in a large section of our industrious community, if such shall be proved to exist, will fail to prompt measures for its correction? Fully to investigate the causes of the existing evils, and their most likely remedies, would be inappropriate here, as it could not fail to lead us upon ground which is denied to us by the nature of our paper. We are only able to advert to one or two points, which the bulk of our readers will probably think of minor importance, though in this they may not be strictly correct. We think, then, that much improvement in the food of a vast number of individuals might be effected by a better economy of their means. Prosperous or non-prosperous, England spends twenty-four millions per annum on the single article of gin, which, instead of tending to compensate for low diet, aggravates its effects. Can we doubt that every aggression which moral forces can make upon this mass of error must add to the real comfort of the people? Even when the money of the labouring classes is laid out on more salutary articles, it is apt to be disposed of in an unthrifty manner. From improvidence and ignorance,

these classes both buy and cook their victuals under great disadvantages. We are forcibly impressed with this conviction when we learn how far money goes, under enlightened and systematic management, for the support of the poor. In workhouses, where, as already seen, the food is better than that enjoyed by many independent labourers, the weekly cost for each person is usually very small—in Edinburgh less than 1s. 6d. per week, in Manchester 2s. 4d., and scarcely any where above 3s. The daily dinner of the 420 inmates of the Edinburgh city workhouse (exclusive of bread) costs only about 16s.; and a few years ago, an individual made a profit for himself by contracting to furnish the people in the Gosport workhouse in food and clothing, and pay all the expenses of the establishment except rent and taxes, for 2s. 6d. a-head weekly—the fare being to all appearance both abundant and good. It is impossible, of course, for a single family to furnish itself as cheaply as a large number; but still the above facts go far to prove that the earnings of poor families must in many cases be ill managed, and might be made to go farther. As far as the evil lies here, we may of course hope that the progress of the temperance cause, and of education, will effect good. With regard to other sources of the evil, we must leave them to be investigated elsewhere.

MR SCROPE'S ART OF DEER-STALKING,

ILLUSTRATED BY MESSRS LANDSEER.*

This large and beautiful volume belongs to a class of books whose titles are calculated to have the same startlingly cheering effect as the pronunciation of such words as Twelfth Night in England, or New-Year's Day in Scotland, or the Twelfth of August in either England or Scotland, is apt to have. It takes us instantaneously from the dust, the care, the struggles, and the weary drudging monotony of this intolerably industrious world, and places us all at once by the side of green nature, at leisure, in peace, and in a refreshing coolness and ease. The effect is like that of going home from school for the holidays, books being all for the time tossed to any where. Many of our readers will require to be informed that deer-stalking is an art still practised in the Highlands of Scotland, amidst the wide-spread moorish and mossy solitudes which have there come in place of the ancient forests. The deer is still to be found in those regions in considerable numbers; but it is an animal of an extremely watchful and easily alarmed character, so that infinite stealthiness is required in those who would bring it down with the rifle. Hence deer-stalking becomes a profession, or, in the other circumstances, a sport, of great nicety, and one by which considerable local distinction is to be gained. Of late years it has been occasionally practised by young men of fashion—the class to which Mr Scrope appears to belong—but always in connection with native sportsmen of humbler rank. In the present work, its whole mysteries are treated of, as practised in the district of Athole, and many personal adventures are related in that pleasant manner which a book referring to field-sports can scarcely fail to assume.

In the chapter on the Necessary Qualifications for a Deer-Stalker, we find that he must be a patient, abstemious, and hardy person, to a degree which would forbid nine out of ten to attempt it, besides having all the following requisites:—"Your consummate deer-stalker," says Mr Scrope, "should not only be able to run like an antelope, and breathe like the trade-winds, but should also be enriched with various other undeniable qualifications. As, for instance, he should be able to run in a stooping position, at a greyhound pace, with his back parallel to the ground, and his face within an inch of it, for miles together. He should take a singular pleasure in threading the seams of a bog, or in gliding down a burn, *ventre à terre*, like that insinuating animal the eel—accomplished he should be in skilfully squeezing his clothes after this operation, to make all comfortable. Strong and pliant in the ancle, he should most indubitably be; since in running swiftly down precipices, picturesquely adorned with sharp-edged, angular, vindictive stones, his feet will unavoidably get into awkward cavities, and curious positions; thus, if his legs are devoid of the faculty of breaking, so much the better—he has an evident advantage over the fragile man. He should rejoice in wading through torrents, and be able to stand firmly on water-worn stones, unconscious of the action of the current; or if by fickle fortune the waves should be too powerful for him, when he loses his balance, and goes floating away upon his back (for if he has any tact, or sense of the picturesque, it is presumed he will fall backwards), he should raise his rifle aloft in the air, Marmion fashion, lest his powder should get wet, and his day's sport come suddenly to an end. Steady, very steady should his hand be, at times wholly without a pulse. Hyacinthine curls are a very graceful ornament to the head, and accordingly they have been poetically treated of; but we value not grace in our shooting jacket, and infinitely prefer seeing our man, like Dante's Frati, '*che non hanno coperchio piloso al capo*' because the greater the distance from the eye to the extreme point of the head,

* Dr Combe on Digestion and Dietetics.

* Murray, London.

so much the quicker will the deer discover their enemy, than he will discover them. His pinnacle, or predominant, therefore, should not be ornamented with a high finial or tuft. Indeed, the less hair he has upon it the better. I leave it to a deer-stalker's own good sense to consider whether it would not be infinitely better for him to shave the crown of his head at once, than to run the risk of losing a single shot during the entire season. A man so shorn, with the addition of a little bog earth rubbed scientifically over the crown of his head, would be an absolute Ulysses on the moor, and (other things alike) perfectly invincible."

In imitation of Franks's Northern Memoirs, an angling-book of the time of the Commonwealth, Mr Scrope has partly given his book a colloquial form, some of the persons introduced being invested with fictitious names. Thus he himself is Tortoise, while a friend and learner bears the appellation of Lightfoot. The inferior persons who attend the party, and whose stores of native anecdote and shrewd sayings help the book considerably, rejoice in their proper ordinary names of Peter Fraser, Sandy, Harry, &c. These things being premised, the reader will understand the following piece of a deer-stalking adventure, which we present as a pretty fair specimen of the work, though only what is technically called a "quiet shot." MacLaren having descried a hart, the party, after doffing their caps, "advanced, sometimes on their hands and knees, through the deep seams of the bog, and again right up the middle of the burn, winding their cautious course according to the inequalities of the ground. Occasionally the seams led in an adverse direction, and then they were obliged to retrace their steps. This stealthy progress continued some time, till at length they came to some green sward, where the ground was not so favourable. Here was a great difficulty; it seemed barely possible to pass this small piece of ground without discovery. Fraser, aware of this, crept back, and explored the bog in a parallel direction, working his way like a mole, whilst the others remained prostrate. Returning all wet and bemired, his long serious face indicated a failure. This dangerous passage then was to be attempted, since there was no better means of approach. Tortoise, in low whispers, again entreated the strictest caution. "Raise not a foot nor a hand; let not a hair of your head be seen; but, as you value sport, imitate my motions precisely: everything depends upon this movement. This spot once passed successfully, we are safe from the hinds." He then made a signal for Sandy to lie down with the dogs; and, placing himself flat on his stomach, began to worm his way close under the low ridge of the bog; imitated most correctly and beautifully by the rest of the party. The burn now came sheer up to intercept the passage, and formed a pool under the bank, running deep and drumly. The leader then turned his head round slightly, and passed his hand along the grass as a sign for Lightfoot to wreath himself alongside of him. "Now, my good fellow, no remedy. If you do not like a ducking, stay here; but, for heaven's sake, if you do remain, lie like a flounder till the shot is fired. Have no curiosity, I pray and beseech you; and speak, as I do, in a low whisper." "Pshaw, I can follow wherever you go, and in the same position too." "Bravo; here goes then. But, for heaven's sake, do not make a splash and noise in the water, but go in as quiet as a fish, and keep under the high bank, although it is deeper there. There is a great nicety in going in properly: that is a difficult point. I believe it must be head foremost; but we must take care to keep our heels down as we slide in, and not wet the rifles. Hist, Peter: here, lay the rifles on the bank, and give them to me when I am in the burn." Tortoise then worked half his body over the bank, and, stooping low, brought his hands up on a large granite stone in the burn, with his breast to the water, and drew the rest of his body after him as straight as he possibly could. He was then half immersed, and, getting close under the bank, took the rifles. The rest followed admirably. In fact, the water was not so deep as it appeared to be, being scarcely over the middle. They proceeded in this manner about twenty yards, when the ground being more favourable, they were enabled to get on dry land. "Do you think it will do?" "Hush! hush! he has not seen us yet; and yonder is my mark. The deer lies opposite it to the south: he is almost within gunshot even now." A sign was given to Peter Fraser to come alongside, for they were arrived at the spot from which it was necessary to diverge into the moss. In breathless expectation they now turned to the eastward, and crept forward through the bog, to enable them to come in upon the flank of the hart, who was lying with his head up wind, and would thus present his broadside to the rifle when he started; whereas, if they had gone in straight behind him, his haunches would have been the only mark, and the shot would have been a disgraceful one. Now came the anxious moment. Every thing hitherto had succeeded; much valuable time had been spent; they had gone forward in every possible position; their hands and knees buried in bogs, wreathing on their stomachs through the mire, or wading up the burns; and all this one brief moment might render futile, either by means of a single throb of the pulse in the act of firing, or a sudden rush of the deer, which would take him instantly out of sight. Tortoise raised his head slowly, slowly, but saw not the quarry. By degrees he looked an inch higher, when Peter plucked him suddenly by the arm, and pointed. The tops of his horns alone were to be seen above the hole in the bog; no more. Fraser looked anxious, for well he knew that the first spring would take the deer out of

sight. A moment's pause, when the sportsman held up his rifle steadily above the position of the hart's body; then, making a slight ticking noise, up sprang the deer; as instantly the shot was fired, and crack went the ball right against his ribs, as he was making his rush. Sandy now ran forward with the dogs, but still as well concealed by the ground as he could manage. "By heavens, he's off, and you have missed him; and here am I, wet, tarred, and feathered, and all for nothing; and I suppose you call this sport. If you had killed that magnificent animal, I should have rejoiced in my plight; but to miss such a great beast as that! Here, Peter, come and squeeze my clothes, and lay me out in the sun to dry. I never saw so base a shot." "Hush, hush! keep down. Why, the deer's safe enough, Harry." "Truly I think he is, for I see him going through the moss as comfortably as possible." "We must lose a dog, sir, or he will gang forrat to the hill." "Let go both of them; it will be a fine chance for the young dog; but get on a little first, and put him on the scent; the deer is so low in the bog that he cannot see him." Fraser now went on with the hounds in the leash, sinking, and recovering himself, and springing from the moss-hags, till the dogs caught sight of the hart, and they were slipped; but the fine fellow was soon out of the bog, and went over the top of the Mealowr. All went forward their best pace, plunging in and out of the black mire, till they came to the foot of the hill, and then with slackened pace went panting up its steep acclivity. "Now, Sandy, run forward to the right, if you have a run in you, and get a view with the glass all down the burn of auld Heelan, and then come forwards towards Glen Deery, if you do not see the bay there. Come along, Harry; the deer is shot through the body I tell you." "Sanguis di Diana! what makes him run so, then?" "Hark! I thought I heard the bay under the hill. No; 'twas the eagle; it may be he is watching for his prey. Hark again; do you hear them, Peter?" "I didna hear naething but the pleviar; sure he canna win farther forrat than auld Heelan; he was sair donnered at first, but he skelped it bravely afterwards: we shall see them at the downcome." True enough they did; for when they passed over the hill to the south, the voice of hounds broke full upon them, and they saw the magnificent creature standing on a narrow projecting ledge of rock within the cleft, and in the mid course of a mountain cataract; the upper fall plunged down behind him, and the water, coursing through his legs, dashed the spray and mist around him, and then at one leap went plumb down to the abyss below; the rocks closed in upon his flanks, and there he stood, bidding defiance in his own mountain hold. Just at the edge of the precipice, and as it seemed on the very brink of eternity, the dogs were baying him furiously; one rush of the stag would have sent them down into the chasm, and in their fury they seemed wholly unconscious of their danger. All drew in their breath, and shuddered at the fatal chance that seemed momentarily about to take place. Fortunately the stag (sensible perhaps of the extreme peril of his own situation) showed less fight than wounded deer are apt to do; still the suspense was painfully exciting, for the dogs were wholly at his mercy, and as he menaced with his antlers, they retreated backwards within an inch of instant dissolution. "For heaven's sake, Lightfoot, stay quietly behind this knoll, whilst I creep in and finish him. A moment's delay may be fatal: I must make sure work; for if he is not killed outright, deer, dogs, and all, will inevitably roll over the horrid precipice together. Ah, my poor gallant Derig! Tortoise crept round canily, canily towards the fatal spot, looking with extreme agitation at every motion of the dogs and deer; still he dared not hurry, though the moments were so precious. Of the two dogs that were at bay, Derig was the most fierce and persevering; the younger one had seen but little sport, and waited at first upon the motions of the older, nay, the better soldier; but his spirit being at length thoroughly roused, he fought at last fearlessly and independently. Whenever the deer turned his antlers aside to gore Tarf, Derig seized the moment to fly at his throat, but the motions of the hart were so rapid that the hound was ever compelled to draw back, which retrograde motion brought him frequently to the very verge of the precipice, and it was probable, that as he always fronted the enemy, he knew not, or in the heat of the combat had forgotten, the danger of his situation. The stag at length, being maddened with these vexatious attacks, made a desperate stab at Derig, and in avoiding it the poor dog at length lost his footing; his hind legs passed over the ledge of rock, and it now seemed impossible for him to recover himself. His life hung in the balance, and the fatal scale appeared to preponderate. Still his fore-legs bore upon the ledge, and he scraped and strove with them to the utmost; but as he had little or no support behind, he was in the position of a drowning man, who attempts to get into a boat, and being also like him exhausted, the chances were considerably against him. In struggling with his fore-legs, he appeared to advance a little, and then to slip back again, gasping painfully in the exertion; at length he probably found some slight bearing for the claws of his hind-feet, and, to the inexpressible relief of every one, he once more recovered his footing, and sprang forward at the deer as rash and wrathful as ever. Tortoise had at length gained the proper spot—the rifle was then raised; but when all hearts were beating high in sudden and nervous expectation of a happy issue, the dogs were unfortunately in such a position that a shot could not be fired from above without risk to one of them, and the danger was fear-

ful as ever. Three times was the aim thus taken and abandoned. At length an opening: the crack of the gun was heard faintly in the din of the waterfall; the ball passed through the back of the deer's head, and down he dropped on the spot, without a struggle."

THE BLIGHTED ONE,

A TRUE TALE.

As I advance in life, I am sensible that the recollections of my early days revive more strongly every hour, and those departed friends whose converse charmed, and whose powers of mind instructed, my youth, live again continually before me, and seem to cheer my solitary home. Sometimes the image of one favourite companion of my youthful hours predominates over the rest—and such a one has for some time past exclusively haunted my memory.

This friend possessed the art of story-telling, or "l'art de raconter," as the French call it, in so superior a degree, that I am now going to do what I ought to have done years ago, and indulge myself by putting down on paper the last of his true histories which I heard him relate. I believe my memory has retained it unimpaired, because the strong interest which it excited served to preserve it from decay, as gums preserve, unhurt by time, the bodies of the dead.

Perhaps my readers will not be as pleased with the tale as I was when I heard it—if so, I only wish they had heard my old friend relate it himself. I wish they had seen his folded arms, his sometimes glistening eye, his occasional and graceful action, and, above all, had heard the varied inflections of his deep melodious voice, as he related to his attentive auditors the tale of THE BLIGHTED ONE.

He was a great traveller, and on his return from one of his summer excursions, I expressed my hopes that he had met with something worth relating. "I think I have," he replied, with a benevolent smile; "but, like our friend Sancho, I must not be interrupted when I once begin, or I cannot go on. I must be sure you are not expecting any one else this evening." We told him we expected no one. Immediately folding his arms, and leaning his head against the wainscot, he began his narrative.

"You know," said he, "that I always ride on the outside of a stage-coach from taste, as well as from economy—because I love to see as much of the landscape as I possibly can; and I try to sit next the coachman, because he knows not only to whom the seats we pass on the road belong, but can sometimes tell one interesting anecdotes of the owners themselves—so I am sure of being entertained on my journey if so placed, at least as long as the many glasses of spirits which my companion thinks it right to drink on the way, have not marred his powers of description."

Well, I was so fortunate on my last journey from London to C— as to get my favourite seat, and it was next an unusually pleasing driver. I found he was a family man—had a wife he seemed fond of, and one child, a little boy, whom he was afraid of losing; and as he saw that I sympathised in his feelings, he was the more disposed to gratify my curiosity. At length, after a very prosperous journey, we saw the abbey church of C— in the distance, and we were not long in reaching the inn.

When the coach was about to stop, my attention was drawn towards an elderly woman, meanly but neatly clad, who was looking up to the coach with an expression of anxious impatience in her eye, which forcibly interested me.

The coachman saw her also, and dashing away a tear, said, "Ah! poor soul! there she is again, and there she has been every day for years; and now that I am a parent myself, and an anxious one too, I feel the more for her." This speech increased my interest in the poor woman, who, now that the coach had really stopped, and the passengers were getting down, drew quite close to the wheels, and looking up in the coachman's face with an expression which evidently unmanned him, said in a hurried voice, "Is he come to-day?" "No, dear soul!" he replied, "but he will come to-morrow, you know?" "Yes, yes," said she, "he will come to-morrow!" She then hurried down the street, followed by a respectable young woman, who shook her head mournfully at the driver as she turned away.

I had paid all demands upon me, and might have gone in search of a place to N—, but I could not stir till I had an explanation of what seemed so interesting to a sentimental traveller like myself, and I asked the coachman if I might speak a few words to him. "I see what you want to ask," he replied; "and as soon as I have done all my duty here, I will walk with you to the inn where the other coach starts from."

I thought him a long time about his duty, but at last he joined me, and we walked down the street together. "You want to know all about that poor woman," said he. "Indeed I do." "It is a sad story, sir—She and her husband, respectable little tradespeople, had one child, and a fine lad he was; but he was more fond of play than work, and his father was

* One of the greatest improvements of the present day is that in Stage-Coachmen, who are now patterns of sobriety, and have learnt to know their worst enemies are glasses of spirits.

a severe man. His mother doated on him, poor soul! and he loved her dearly. But not to be lengthy: when he was eighteen, poor Willie did something, I do not know what exactly, which put his father in a great rage, and in spite of his wife's tears and prayers, he struck his son, and turned him out of doors. I have always heard the poor lad did not deserve it; certain it is that he was wrong in one thing: he told his father he saw him for the last time, for he would never come back to be struck again! And he enlisted directly, and left C— with the soldiers.

Oh! the agony of the poor father when he had slept on his rage, and rose the next morning! The poor mother had not slept at all, and they both went in search of their now pardoned son. But he was gone! And by a very affecting letter to his mother, they learnt that he was ordered to the West Indies! and they were not rich enough to effect his discharge! So he sailed, and it broke his father's heart.

On his deathbed he left loving messages and his blessing to his poor boy, and said he died of a broken heart, from the recollection of his harshness to him.

Well, time went on, and the poor widowed mother might be said to live only for and in letters written by Willie; and every letter was full of love and piety. At last came a letter from him to say he had been at death's door with a bad fever, and was so weak still after it, that the medical men had ordered him home, as his only chance of life.

"Oh! I shall nurse him well again!" the poor mother said, all fear lost in the delight of having him restored to her; and when the time came for the vessel's being due in which he sailed, busy as a bee was she in preparing for his coming.

At last he wrote to say he was landed, that he had almost recovered his health and strength in the voyage, and should be at C— on such a day. That morning the poor mother went to the coach-office long before the hour announced the approach of the stage. It came, but she could not see her son on the outside; perhaps he was inside, and she ran eagerly forward to look in at the window, but he was not there. "Where is he! Where is my boy!" she cried to the driver, who had not as yet observed her. Now, sir, that driver was a good sort of man enough, but he did not understand a parent's feelings; and what do you think he replied! "Your son! poor soul! he is not come indeed!" "But he will come to-morrow, then; is there not a letter to say so?" "No, mistress; your poor son will come no more! He fell off the coach coming from Portsmouth to London, and was killed on the spot!"

I, a little boy then, was present at this scene, and never shall I forget the shriek with which she repeated the word "killed!" and then fell back as if it had struck her to the heart! She was carried home insensible, and we all hoped she would never recover. But it was ordered otherwise. She recovered to life the next day, but not to reason; for the first words she uttered were, "I must get up and dress myself, or I shall not get to the coach in time to meet Willie!" And, finding she was able to dress herself and walk as usual, her niece, who lived with her, she whom you saw to-day, let her go out, and she reached the coach as the horn blew. Oh! it was very affecting to see that poor bereaved creature go up to the coachman and ask again if her son was come! The driver that day was a neighbour of hers, and, having heard the tale, he replied kindly and cleverly, "No, he is not come to-day, but perhaps he will come to-morrow." "Yes, yes," she replied with a smile that wrung the heart, "he will come to-morrow," and away she hurried. And, sir, she has come to that coach-office, and asked the same question, received and repeated the same answer, for, as I told you to-day, many many years!" "But surely, sir, she does not suffer much, does she?" "I trust not," I replied; "and this hope born of despair is, probably, the merciful ordering of Divine Providence for her relief." "Ay, so I think," he replied; "but, heaven bless you, sir! here is your coach, and it is now setting off." "I hope we shall meet again," I said, shaking him by the hand, and off we drove.—But it is late (added my friend), and I must defer the rest of my story, for it has a sequel, till to-morrow!" and we unwillingly let him depart.

He came again early the next evening; we were alone, and he resumed his narration.

"Well, I went on to N—, and at the end of a week I returned to C—, and the three-horse diligence, by which I then travelled, went to the same inn as the London coach, and we reached it just as the horn of the latter was heard in the distance, and, waiting at her accustomed place, was the poor bereaved mother.

Again I heard the eager question, and the kindly spoken and well-meant reply. I saw the hope renewed which was, I knew, to end again in at least temporary despair. And, impelled by a feeling which I could not resist, I followed her and her companion to their dwelling. But I would not tap at the door till I had given them time to settle themselves again, and then I gently

knocked. The niece, a woman of a very benevolent countenance, opened it, and asked me to walk in, like one used to see callers, who came probably from the same motives as I did. Her aunt was sitting by the fire, and busy knitting, moving backwards and forwards with a saw-saw motion of her body, which, I thought, was accelerated as she glanced her wild eyes over me. I bowed courteously, taking off my hat as I did so, for I felt myself in the 'venerable presence of misery,' as Sterne calls it; but she scarcely bowed in return, and seemed evidently to forget I was present. I therefore turned to ask questions of her niece, beginning by saying that I knew her poor aunt's story.

She readily answered me, and told me what an amiable lad Willie was; and had his father, as she said, been more kind to his little faults, he might have been alive and doing well. But he was not, and he drove Willie away. "Oh, sir," cried she, "what a scene of sorrow and remorse I saw, when they found the poor lad was gone past recall! Sorrow was bad enough, but remorse is far, far worse to see. Well, it broke his poor father's heart, and as he forgave his son, I hope God forgave him!" Here there was such a degree of increased movement in the poor sufferer, that I felt afraid she understood what we were saying, and begged the niece would speak lower. She told me that she had tried, in very bad weather, to keep her aunt from going to the coach, but that it brought on such a fit of phrensy that she dared not do it again; and I hope it will please the Almighty to take her," she added, "when she grows too infirm to move." "Does she always knit?" "Yes, sir, and all she does is against Willie comes; stockings, comfortable—she is always employed about him. See, sir—(opening a drawer)—all the drawers are filled with her work, and the kind neighbours get them sold for her, as she does not miss them, and that helps to get her many little comforts." "Does she like to have money given her?" "Yes, and all she gets, she says is for him." I then took out a piece of money.—"Give it to her yourself," said the niece; and when I offered it, she snatched it eagerly and said, "ay, for him—yes, yes—looking up in my face with a sort of smile of woe—"he will come to-morrow!" Then, starting up, she put it below a little black shade of her son which hung up over the chimney-piece, the frame of which she had decorated with flowers, and all the bits of finery she could find.

I felt so interested in 'this stricken deer,' that I wanted to multiply question on question, especially as I was so much attracted by the feeling and right mindedness which all the niece's answers showed. I thought I should weary her, but I allowed myself to ask one question more, and that was, where the young man had been buried; and she was telling me all about the accident, when it was evident that the poor aunt went backwards and forwards in her chair in evident agitation, murmuring to herself, 'yes, yes, he will come to-morrow, he'll come to-morrow!' And fearing that I had done harm, I hastily withdrew, telling her I trusted we should meet again.

This circumstance convinced me still more of what I had before suspected, that maniacs, whom nothing can prevail upon to speak, and who seem to know nothing, understand all that is said, and therefore have their feelings often unnecessarily wounded, and I really felt like a criminal when I left the poor woman's house.

From C— I returned home." "And never told us this tale before!" cried I; "how could you be so unkind?" "I never had an opportunity; but let me finish it now—I have not done yet. This summer I went north again, and always intending to get to C— at last, I wished to arrive there just as the London coach should come in; but I was too late, and I saw my friend the driver walking up the street, all his duties over for the time. My first question was for his ailing boy. It was quite well, and he and his wife so happy and thankful, he said. "And the poor widow?" "You will be glad to hear," he replied, in a serious and solemn tone, "that she is no more. She died a few days ago, and she is to be interred this evening!"

For a moment I was disappointed, for I had reckoned on seeing her again, but the next minute I rejoiced in her release; and having expressed my wish to go to the house, and attend the funeral, my friend encouraged me to do both, assuring me that her excellent niece would be gratified by it. Accordingly I went, and found two or three men and women in mourning, sitting with the niece in the room below. The latter was affected at seeing me, and, as if divining my wishes, she said, "Would you like to see her, sir! the lid is not yet screwed down," and I followed her into the chamber of death. "She makes a sweet corpse, sir!" said she, unveiling the face of the dead. "She does indeed!" "She looks like herself now, sir, for she was a very handsome woman before she knew sorrow! Dear me! when the last blow came upon the others, it seemed to wither her up at once like! Her dark hair was all grey in no time! It seemed as though a blight had come over her!" "Ay, indeed she was a blighted one!" replied I; "but she is now where the weary are at rest." "No doubt," she answered, tears trickling down her cheeks as she spoke; "and what a blessed thing it was, sir, that she knew her Creator in the days of her youth, for she was prevented all preparation for her latter end in one moment!" "Did she recover her senses before she died?" "In death I think she did; she was seized suddenly with fainting fits, and for two days went from one into another, but the third day she recovered from them entirely, and hearing the well-

known horn, she started up in the bed, said she must rise and dress, or she should be too late at the coach; and she made an effort to get up, but, with a mournful look, fell back again. A change came over her countenance, and, looking round at those nearest her bed, she seemed to be seeking for some one whom she could not find; and somehow we thought that the whole truth came over her mind in a moment; for she clasped her hands together, and looked up to heaven with such a pitiful face! Then saying with great effort, 'Mercy! Lord Jesus!' she fell back with a sigh, and all was over!"

And all was over, and there she lay before us in the solemn stillness of death, whom I had so lately seen in restless, and probably at times, in indescribably suffering! and I gazed upon her pale and placid face with even pleasurable emotion.

"Sir," said the niece, "do you not think she is now reunited to her child! Oh! sir, what a joyful meeting must theirs have been! Tell me, sir, do you not believe that we shall meet those we have loved in another world?" "I do indeed believe it," I replied, "and I trust she now knows the truth of this belief; however, be that as it may, she is where the tears are wiped away from all eyes." "Yes," she falteringly replied, "and she is joining, I trust, the song of the redeemed."

It was now time to close the coffin; so, having given a last look to the unconscious dead, I left the niece alone to gaze her last also, and ran out of the house.

It was a fine spring evening when my friend the coachman, and myself, joined the funeral procession. There were many followers, for the story was known, and the afflicted woman, who had always been an object of general respect, had become one of general pity; and many strangers, like myself, had been induced to see her carried to her last home.

Many of the graves in the churchyard to which we bore her were covered with primroses and violets—a new sight to me. It was full of people, and even the idle boys, who had often, no doubt, made a mock of her when she was alive, and called her mad Miriam as she hurried along, seemed to be awed into silence by the solemn seriousness of the other spectators. The clergyman read the beautiful service of the Church of England with deep feeling; and when all was over, and we had heard that indescribably affecting sound of the first dust thrown upon the coffin, I turned away, but I fancied that all present withdrew, like myself, with relieved and rejoicing hearts, because a sufferer was at rest.

The next day I left C—, and the coach in which I was, passed the churchyard in which poor Miriam lies, and I eagerly looked out for her grave. I had marked the spot exactly, and, as I expected, the hand of faithful affection had already covered with the fresh and blooming flowers of spring the grave of the *Blighted One*.

There, I have done; now, tell me how you like my story!"

A. O.

POLYTECHNIC INSTITUTION.

A YEAR or two ago, a description was given in this Journal, of the Adelaide Gallery, an establishment recently set on foot in London for the advancement of scientific knowledge, and for its dissemination, in a pleasing way, among the great body of the people. The Polytechnic Institution is another metropolitan establishment of the same order, which has lately been incorporated by royal charter, and of which we purpose to give some account in the present article.

The title of "Polytechnic," conferred on this institution, implies its having in view the advancement of the "various arts and sciences." To the furthering of practical science, more particularly in connection with agriculture, manufactures, and other branches of industry, are the views of the institution directed. For these purposes, a large and convenient edifice has been built, having its public entrance at No. 309, Regent Street, in the west end of the city. The front of this structure is extremely elegant, and the whole building extends backward for a length of three hundred and twenty feet, affording abundant space for the numerous divisions required in the interior. The principal of these divisions may be thus enumerated. 1st, The hall of manufactures; 2d, The great hall; 3d, The gallery of the great hall; 4th, The theatre, or lecture room; 5th, The chemical laboratory; 6th, The boiler room; 7th, The engineer's workshop; 8th, The geological room; 9th, The room containing the block-cutting machinery and naval models; 10th, The bazaar of the benevolent repository (a particular association of ladies, in connection with the institution, for disposing of works of art and ingenuity for charitable purposes). To these divisions of the establishment may be added a reading-room, where periodicals and newspapers are furnished for the use of an especial class of subscribers, who pay annually a sum of three guineas for the conjoint privileges of the reading-room and institution. The annual subscriber's ticket, for the institution itself, is one guinea, and the cost of admission to non-subscribers one shilling. For this latter sum the visitor may view

* When I was first intending to write down this story, told me by my friend in my youth, I was much mortified to find myself forestalled by a similar anecdote, related in that unique and most amusing book, "The Doctor," vol. iii. pp. 66 and 67. That "great known unknown" says, the fact is related by Dr Uwin in his Treatise on Disorders of the Brain. But he tells it of a lady, and says the lost object was her husband, and that this lady, for fifty years, went to the spot where she expected to meet her husband, saying, like poor Miriam, "He is not come yet, I will return to-morrow!" Though alike, it does not follow that the stories are the same; but I am very sure, that, as my friend was not given to decide, my story is a true one, and very likely so is Dr Uwin's, as the same cause might have the same effect.

the whole contents of the establishment, hear the daily lecture upon some branch of natural philosophy, and witness, at fixed hours mentioned in the bills, the operations of the microscope and diving-bell, as well as various magnetic and electro-magnetic experiments.

Though opened to the public only in August 1838, the Polytechnic Institution is already rich in contents. The hall of manufactures, which is forty-five feet long by forty wide, has six divisions, the first of which exhibits a small printing establishment. The printing-press is Wayte's self-inking one, which is represented as saving the labour of one man entirely, and the frames and case-racks are upon an improved plan. This division contains also models of larger printing-machinery. A second division of this hall exhibits the workshop of an optician; a third, a glass manufactory; a fourth, weaving by power-looms; a fifth, the workshop of a turner; and a sixth contains a rotary or revolving steam-engine of six-horse power, upon a plan invented by the Earl of Dundonald (late Lord Cochrane), who states the advantages of his engine to be "a circular motion originated from one solid part, incapable of derangement." It is scarcely necessary to say, after this enumeration, that the hall of manufactures presents to the visitor many objects of interest. He may purchase specimens of all the various kinds of manufactures, and, if possessed of a taste for making optical instruments, for glass-blowing, for turning, or for printing, will have full opportunities here of learning the best mode of fitting up small private establishments in any of these branches.

The principal staircase of communication leads from the hall to a spacious apartment, devoted to the purposes of a charity bazaar, and supplied with the numberless articles of taste and ornament usually found at fancy fairs, by the association of ladies alluded to. Directly over the hall of manufactures is the lecture room, capable of containing five hundred persons, and where a lecture is delivered every day, at two o'clock, on some branch of science. In this theatre the largest hydro-oxygen microscope ever constructed is exhibited. The screen for the display of the magnified objects contains four hundred and twenty-five square feet, and the power of the instrument is proportionally immense. Behind the apartments now mentioned, is the great hall, which is entered from the main staircase, and which measures one hundred and twenty feet in length, forty feet in width, and the same in height. This noble apartment has a gallery passing around its whole extent above. The most prominent objects in the great hall are the two canals in the centre of the floor, which are united at one end in a deep cistern, and present altogether something of the form of a horse-shoe. The superficial extent of this sheet of water is seven hundred feet, and the gross amount of the fluid ten thousand gallons. The principal use of these canals and their uniting reservoir, which last portion of the water is much deeper than the rest, is to exhibit all the operations connected with naval architecture, and to show the practical operation of the diving-bell and other diving apparatus. In connection with the former of these objects, the canals and the space between them present the models of a building dock, launching slip, dry dock, graving slip, and pier, as well as of canal locks and other structures of much importance. There are also many beautiful and complete models of vessels, foreign and British, and of portions of vessels, or improved instruments belonging to them. Altogether the canals afford in this respect an admirable field for the study of naval architecture.

The diving-bell requires a more detailed notice. This machine is capable of holding four or five persons, and at certain times visitors have the choice of descending in it into the reservoir. The diving-bell is composed of cast-iron, open at the bottom, with seats around, and is of the weight of three tons. The interior is lighted by windows or openings, in the rounded crown or top, of thick plate glass, which is firmly secured by brass frames screwed to the bell. The machine is suspended by a massive chain to a large swing crane, with a powerful crab, the windlass of which is grooved spirally, and the chain passes over into a well beneath, where the compensation weights hang, arranged so accurately that the weight of the bell in the reservoir is counterpoised by them at all depths. Two powerful air-pumps of eight inch cylinder supply the bell with air, which is readily conveyed by leather pipes to any depth. Such is the diving-bell of the Polytechnic Institution. It is put into action several times daily, in presence of many spectators. No inconvenience is ever occasioned to those who descend, and real danger is almost impossible, as the whole ten thousand gallons of water can be let off in the space of one minute at any time! It is scarcely necessary to say that the principle of the diving-bell is the same as that which preserves the inside of a glass tumbler dry, when plunged into water with the mouth downwards. Another exhibition accompanies that of the diving-bell in the great hall of the institution. A diver, from the "Submarine and Wreck-Weighing Association," descends to the bottom of the reservoir, clothed in a water-and-air-tight diving-dress. A large helmet, furnished with eyes or windows of glass, encloses the diver's head, and he is furnished with air by means of flexible tubes. By taking a model of a ship with him to the bottom of the reservoir, and there affixing to it close bladders or cones filled with air, the diver makes the little vessel rise spontaneously to the surface, and thus shows in miniature the objects of the Submarine Association to which he belongs. That society proposes to raise sunken ships, and also to

keep up sinking ones, by affixing to them, in this manner, large air-and-water-tight bags or vessels, which may elevate them to, or maintain them at, the surface, on being inflated with air by the air-pump. We do not know whether this plan has succeeded on a great scale, but, certainly, the diver effects his object perfectly in the reservoir.

The great hall is surrounded by glass presses or cases, in which a vast number of useful, rare, and curious models of all kinds, are enclosed, with here and there some fine painting, bust, or other ornamental object, to add variety to the scene. Perhaps one of the very greatest curiosities in the whole building is the Mosaic portrait of the king, George IV., which stands in a small room at the west end of the hall. Our readers may be at some loss at first to understand what is meant by a Mosaic picture. The one now alluded to is composed of about two millions of separate stones—pebbles, jaspers, and many others—all polished and laid together so as to form one smooth continuous surface, while arranged so, at the same time, as to colours, as to give an excellent likeness of George IV. Not one speck of paint was used in the composition, which occupied the artist, Moglia, a period of five years. The natural hues of the stones were the only dyes employed by the artist. This extraordinary portrait is for sale, and the price asked for it is one thousand guineas.

Handsome side stairs lead the visitor to the gallery of the great hall. This place also is sided all along with glass cases, containing various models and other objects of interest, interspersed here and there with paintings and busts. At each end of the gallery there stands a large metallic reflector, the one placed precisely opposite to the other. The reflection of sound, as well as of heat, is strikingly exhibited to the visitor by these reflectors. Though distant from each other one hundred feet, the slightest whisper, emitted in front of the one, may be heard in the focus of the other; and a piece of meat may in like manner be cooked in the focus of the one when a fire is placed in the focus of the other. It is impossible here to do justice to the general contents of this gallery. Hydrostatic beds, clocks, orreries, anatomical and agricultural models, with numerous articles of virtu, have been collected for the gratification of the spectator. Even the paintings are of a very superior order, there being originals by Rubens and Salvator Rosa in the gallery. We can only particularise a few, however, of the remaining objects to be seen about the great hall and its gallery.

In one of the glass cases there is to be seen what is called "an hydrostatic paradox." The machine to which this name is given is a long vertical tube, rising out of a flat bellows. A person standing on the bellows can raise himself by blowing down the tube. The principle is the same here as that which enables a small column of water to burst a strong barrel when thoroughly filled. The column of air or of water bears on all parts with equal weight, and thus effects what was at first thought so wonderful as to be termed the hydrostatic paradox. A still more remarkable instrument is the powerful electro-magnet, which is to be seen daily in operation. This instrument is simply a bar of soft iron, bent into the form of a horse-shoe magnet, around which is wound a series of convolutions of insulated copper wire. When a voltaic current (or current from a voltaic or galvanic battery) is made to circulate through these coils, and, consequently, at right angles to the axis of the iron bar, powerful magnetic effects are instantly developed, and the bar of soft iron becomes for the time a magnet of immense power, being capable of supporting the enormous weight of one ton, or 2240 lbs. This power exists only during the maintenance of the voltaic current; when this ceases, the bar of soft iron returns instantly to its original state, and is magnetic no more. Among the electro-magnetic instruments there are some others not less remarkable than the preceding. There are also models of land carriages, where the intended moving power is electro-magnetic.

The geological room, attached to the great hall, is not yet completely furnished; but, in the mean time, there is a loom in it, called a Jacquard loom, where the delicate and difficult operation of weaving figured silk is to be daily beheld. The room containing the block-cutting machinery, must be to many one of the most interesting portions of the establishment. All the blocks for the service of the British navy are made from machines of this description, which drive saws of various kinds, and chisels, and go through all the successive operations of boring, morticing, shaping, scoring, drilling, &c., till they bring the rough timber to the condition of the finished block.

The chemical laboratory, the boiler room, and the engineer's workshop, adverted to at the commencement of this paper, are on the basement story of the building, beneath the hall of manufactures. The laboratory is calculated to be of great service to private experimentalists and patentees, who may wish to prosecute inquiries, with competent assistance, into any particular and intricate point connected with some branch of manufacturing industry. Such purposes were in the view of the founders of the laboratory. Two steam-engine boilers, and other machinery, are to be seen in the boiler room; and a forge, and other apparatus, in the engineer's workshop. On this basement story, also, visitors have an opportunity of daily witnessing various plans of economical cookery in practical operation. Not unimportant lessons may here be learned respecting the saving of fuel, and other matters of consequence in every-day life.

It is scarcely necessary for us to observe, in conclusion, that of the plan and objects of such institutions as this we highly approve. Indeed, the feeling of approval seems very general, if we may judge from the number of visitors who are constantly to be seen in the various apartments of the Polytechnic Institution; and as the establishment is yet in its infancy, it is but reasonable to anticipate that, as its contents grow more varied and interesting, the support given to it will continue to increase. We hope and trust this will be the case.

A FEW WEEKS ON THE CONTINENT.

THE BRUNNENS OF NASSAU.

WE have arrived in Nassau, a German duchy, to which allusion has occasionally been made in the previous articles. Nassau is a hilly district, bearing a considerable resemblance in its moderately high mountains and narrow fertile valleys to the southern part of Scotland, and contains altogether about 350,000 inhabitants. On the west, from the vicinity of Frankfurt to near Ehrenbreitstein, it is bordered by the Rhine in the most romantic part of its course. The title of the duchy is derived from the exceedingly ancient castle of Nassau, standing on the river Lahn in the heart of the district; and from two sons of Otho, the feudal proprietor of that stronghold in the tenth century, sprang the present Duke of Nassau and the King of Holland—the latter being from the younger of the sons. The house of Nassau, therefore, in its two branches, is entitled to be ranked as one of the oldest of the reigning families of Europe.

The duchy of Nassau is the beau-ideal of a nice little sovereignty. With great external beauty, the country is sufficiently fertile in its low winding valleys for any reasonable wish; on its sloping hill-sides are vineyards producing the finest of the Rhenish wines; its climate is in a high degree salubrious; and it possesses a large share of mineral wealth, particularly coal and iron, while its slate forms a large article of export. The most remarkable thing about Nassau, however, is its mineral springs, which have been resorted to by real or imaginary valetudinarians since the days of the Romans, and are now visited annually by thousands of persons from all parts of northern Europe. These mineral springs, or brunnens, as they are called, have within the last few years been made favourably known in England by means of various highly interesting works, among which I need only allude to "Bubbles from the Brunnens of Nassau," by Sir Francis Head, and the "Spas of Germany," by Dr Granville; so much, indeed, has been lately written respecting the Nassau waters, that I should consider it useless to say any thing about them, if I did not know that these unpretending papers pass into the hands of many readers, who cannot have had an opportunity of seeing any of the published works on the subject.

The springs of Nassau are of widely different temperatures and qualities, some being as hot as 150 degrees of our common thermometer—that is, nearly as hot as the hand can endure on being plunged into them, and others being quite cold. They rise in various parts of the country, from the bottoms of hills; and wherever they have made their appearance, there has a town, or at least some dwellings for visitors, been planted. The places of greatest resort are four in number, Wiesbaden, Schlangenbad, Langenschwalbach, and Ems. Speaking in a general manner of the waters at these places, the author of "Bubbles from the Brunnens" observes—"From the hills burst mineral streams of various descriptions, and besides the Selters or Seltzer water, which is drunk as a luxury in every quarter of the globe, there are bright sparkling remedies presented for almost every disorder under the sun—for instance, should our reader be consumptive, or, what is much more probable, be dyspeptic, let him hurry to Ems; if he wishes to instil iron into his system, and to brace up his muscles, let him go to Langenschwalbach; if his brain should require calming, his nerves soothing, and his skin softening, let him glide onwards to Schlangenbad; but if he be rheumatic in his limbs, or if mercury should be running riot in his system, let him hasten, 'body and bones,' to Wiesbaden, where, they say, by being parboiled in the Kochbrunnen, all his troubles will evaporate."

Entering the country from the farther extremity, we, in the course of our journey, first reached Wiesbaden, the capital of the duchy, and principal place of resort by visitors. Wiesbaden is a handsomely-built town of modern appearance, situated in a valley surrounded with hills, but having a pleasant exposure and inclination to the south, or in the direction of Biberech on the Rhine, from which it is only a few

miles distant. It is in a particular manner protected from the north and north-east winds by high swelling hills, and is therefore allowed to be as suitable for a place of abode during winter as summer. The various rows of neat stone houses, which compose the principal streets, contain all classes of private lodgings for strangers; and besides these, there are several large hotels, which, during our stay, were crammed with temporary residents. The greater number of the latter public establishments are in the neighbourhood of each other in the more confined part of the town, and are so placed to be near the source of the chief hot spring, which is conveyed by pipes to their baths. There are altogether fourteen springs, though it is believed they are from one main source in the north-west part of the mountain overhanging the town, as they resemble each other in quality and temperature. The chief is the Kochbrunnen (boiling spring), which rises in a small open court or place, and is environed with a wall, except at a spot where steps descend to the brink of the water. Approaching this enclosure, we perceive a cloud of vapour rising from the surface of the spring, as from a hot caldron. The water is of a dull yellow appearance, by no means inviting, and is at the temperature of 150 degrees Fahrenheit, which it maintains during every season of the year. In the morning it is drunk in large quantities by the visitors, a person dipping and filling their glasses at a small charge. The taste of the water is very peculiar, and has been compared by some writers to weak chicken broth. "When I (says the author of the 'Bubbles') declare that it exactly resembles very hot chicken broth, I only say what Dr Granville said, and what in fact every body says, and must say, respecting it; and certainly I do wonder why the common people should be at the inconvenience of making bad soup, when they can get much better from Nature's great stock-pot—the Kochbrunnen of Wiesbaden. At all periods of the year, summer or winter, the temperature of the broth remains the same; and when one reflects that it has been bubbling out of the ground, and boiling over, in the very same state, certainly from the time of the Romans, and probably from the time of the flood, it is really astonishing to think what a most wonderful apparatus there must exist below, what an inexhaustible stock of provisions to ensure such an everlasting supply of broth, always formed of exactly the same eight or ten ingredients, always salted to exactly the same degree, and always served up at exactly the same heat. One would think that some of the particles in the recipe would be exhausted; in short, to speak metaphorically, that the chickens would at last be boiled to rags, or that the fire would go out for want of coals; but the oftener one reflects on these sort of subjects, the oftener is the old-fashioned observation repeated, that, let a man go where he will, Omnipotence is never from his view."

Very wonderful things are told of the curative powers of the waters. According to Dr Granville, gout, rheumatism, paralysis, and other serious complaints, yield to a full course of bathing and drinking. My own idea is, that the chief and direct benefit consists in the promotion of intestinal action with relief to the skin, and that these, united with fresh air, exercise, and change of diet and scene, lead to all the cures which we hear of being performed both at this and the other watering-places.

Our residence during our short stay was at the Eagle Hotel, an establishment surpassing in size all the inns which had hitherto come under our notice. It possesses a spring of mineral water, second only in strength and heat to the Kochbrunnen; and this, by giving it a degree of superiority over other establishments of the kind, crowds it with customers. The lower floor of a large wing of the building is occupied entirely with bathing closets, into which the water is conducted in a prime state of warmth, as may be required by the various bathers.

It being a Sunday which we chanced to spend in Wiesbaden, an opportunity was afforded us of seeing the town in its holiday dress, and also in what manner the day was spent in the capital of the Protestant state of Nassau. Judging from external appearances, there was no difference between the mode of spending the Sunday here and at Cologne, or, I may add, at Brussels. All the shops, with the exception of a few of what may be called the more respectable, were open from morning till night, and unless that there was attendance at church to a comparatively small extent, there was really nothing to indicate that it was the day of rest. The scene in the dining-hall of our hotel went beyond anything I ever witnessed in the form of hubbub. Let the reader only conceive the idea of an immensely large apartment, resembling a ball-room, filled with tables at which there sat down two hundred and forty persons to dinner; then imagine the hurryscurrying of waiters, the loud talking of the people—the Germans are horrid talkers—and the deafening play of drums, trumpets, and hautboys, in the gallery; the whole forming a scene of the most distracting nature, which it was out of our power to endure. Hastening away as soon as possible from this "quiet Sunday dinner," we proceeded to the eastern environs, where, close by a pretty piece of park scenery, and near the public thoroughfare from Frankfurt, stands the grand object of attraction in Wiesbaden. This is the Kursaal, a handsomely built edifice, of a single story in height, but covering a considerable space of ground, and containing a number of magnificent apartments devoted to public entertainments and gambling.

Reaching towards it on one side, like an extensive wing, is a long open colonnade, the inner side of which is laid out as shops for the sale of jewellery, drapers' goods, shoes, books, toys, pictures, and other objects, all which wares were exposed in gay profusion on stalls, as in a bazaar. On proceeding to the grounds behind, we found them already fast filling with company, while hundreds of persons, scattered about on chairs and forms, were busy sipping coffee supplied by the active attendants of the Kursaal.

Curious to observe what was going on within doors, we sauntered through the smoking and chatting groups of smokers and coffee-drinkers into the great central hall or saloon of the edifice. This saloon, which may be one hundred and thirty or one hundred and forty feet in length, and fifty feet in height, is elegantly embellished with painting and gilding, and is striking in effect, from possessing a gallery all round, supported by thirty massive Corinthian pillars of red marble. In this splendid apartment, balls and concerts take place during certain evenings of the week, and a table-d'hôte is prepared daily at the usual small dinner charge for all who are pleased to attend. At the table-d'hôte on Sunday, the Duke of Nassau, who resides at a hunting-seat in the neighbourhood, ordinarily gives his presence, which has the effect of causing the establishment to be visited by the elite of Wiesbaden society. To an Englishman, nothing seems more strange than this species of intercourse between the sovereign of a state and the throng of visitors at a watering-place in his dominions. Such things, however, excite no surprise in continental society, in which there is a familiarity between high and low—at least between all whose conduct bears the stamp of politeness—that could not for a moment be sanctioned in Britain, notwithstanding all its freedom, and the democratic nature of some of its institutions.

Previous to our entrance into the great saloon, the long dinner tables had been cleared away, and two men were just in the act of bringing in a rather heavy-looking iron-bound box, which they placed in the middle of the floor. Next, they set down a table of a particular construction, and opening the box, drew out several bags of coins, consisting of gold and silver pieces, which they arranged in heaps upon the table. Lastly, they planted in the centre of the table the usual instrument of gaming—a revolving horizontal dish and ball. The perfect business-like coolness with which these preparations were made, was deeply interesting. We had heard of gaming-tables, but never before had seen one. Not that England cannot show such things, but happily they have the discredit of being illegal, and do not fall within the every-day experience of the middle classes. Here, however, there was no disguise, no illegality—the whole affair was quite open, and all ranks had an opportunity of venturing their money. Shortly, the directors took their seats, a crowd of men and women gathered round, and the play commenced. I anxiously watched the very curious scene. There was no lack of players, but I kept my eye on three in particular. One was a gentleman, who, with a firm calculating countenance and undisturbed air, risked a gold piece at each roll of the ball, and seemed tolerably successful; after a certain length of time, when he had pocketed at least half-a-dozen Frederick d'ors, he walked away, as if satisfied with his day's work. The other two persons were females; one was an elderly lady, apparently about sixty years of age, perhaps seventy, and the other a peasant, seemingly the wife of a neighbouring rustic—a woman, for instance, who had come to town to sell the butter and cheese which she had made during the week, and now, mingling with nobles and gentry, was perilling her sorry earnings upon the gaming-table. The old lady was entranced in the game; she was losing; her throat wrought in agony, like an exhausted pump; now, she gained a thaler, and her spirits rose; she had, as she imagined, got the turn; but no; again luck was running against her; she could endure it no longer, and retired out of sight to give room to a new comer. The peasant woman was moderately successful. She never risked more than a silver coin about the value of half-a-crown, and her tactics consisted in always laying the money on the same colour. Red was her favourite. She staked a piece on a corner patch of red every roll of the ball. I think she must have gained a dozen pieces before she retired, yet she did not appear any way elated; she might have lost previously at some other table, or on the previous Sunday, and had now only won back the amount of her losses. At all events, I set her down as a being who was on the high road to ultimate ruin, and I hoped that she was not a proper sample of the peasantry of Nassau.

The establishment of the rouge-et-noir table in the grand saloon, did not excite particular attention. There was, as we observed, another table of the same kind in a side apartment fully as well attended, and from a room adjacent were heard the laughter and shouts of billiard players equally busy at their game. It rather excited our surprise to see no English at any of these gaming tables, the players being either Germans or French; perhaps they preferred attending the opera, which was proceeding in another quarter of the town, but of this we had no opportunity of judging. Disgusted with the racket and irrationality which every where met the eye, and finding not a single spot at our hotel where quietness could be obtained, we early in the evening ordered the calash to be yoked, and, stowing ourselves in it, fled from Wiesbaden to a scene

which we hoped would be more congenial both to our feelings and to the peaceful character of the day.

It was a lovely autumnal evening as our carriage wound its way over the rounded heights of the Taunus mountains in the direction of Langen-Schwalbach. At every step we were reminded of the resemblance to our own Scottish mountain scenery. Leaving the lower yales, thickly clad with apple-trees and vines, we found, as we ascended, that the hill-sides became brown and heathy, and were here and there enriched with plantations of hardy timber, which gave shelter to the arable fields of the upland farmers. All was placidly calm as a Sunday evening ought to be. The small forests of larch and oak which lay open to our path, and into which we now and then penetrated a short way, were silent as a desert far from the haunts of man. The inhabitants of a small hamlet sat at their doors, in their holiday dresses, enjoying the tranquil scene, and showed, by their appearance, that they at least rested from their labours one day in seven. Having gained a considerable altitude on the ascending brues, a splendid view of the Rheingau presented itself on our left, through an opening in the woods. The whole expanse of the river, with its rich banks from Bingen to Mayence, lay spread out like a picture, and we for a moment felt how far these glorious works of Nature transcended those which mankind usually create for their contemplation and amusement. From this point the road to Langen-Schwalbach proceeds in a northerly direction at a greater distance from the Rhine, which is hence shut out from the view of the traveller. Those, however, who wish to visit Schlangenbad, turn to the left, and are conducted by a steep descending path to that place of resort.

Schlangenbad, which unfortunately we could not afford time to visit, consists of little else than two large boarding-houses, with baths and springs for the accommodation of visitors. It is the most retired of all the brunns of Nassau, and is chiefly resorted to by persons who are desirous of enjoying country air with the softening and cheering influences of its cosmetic waters. On this latter account, it is, I believe, most in favour with ladies, particularly those who find the necessity for remedying the injuries of time. The mineral spring of Schlangenbad owes its purifying and softening properties to muriates and carbonates of lime, soda, and magnesia, held with a certain quantity of carbonic acid in solution. Its name signifies the Serpent's Bath, there being a plentiful variety of snakes, though of a harmless kind, in the vicinity. The author of the "Bubbles" is ecstatic in his description of the delicious influence of the water on the skin, though not more so than other writers. "The baths at Schlangenbad (says he) are the most harmless and delicious luxuries of the sort I have ever enjoyed; and I really quite looked forward to the morning for the pleasure with which I paid my addresses to this delightful element. The effect it produces on the skin is very singular; it is about as warm as milk, but infinitely softer; and after dipping the hand into it, if the thumb be rubbed against the fingers, it is said by many to resemble satin. Nevertheless, whatever may be its sensation, when the reader reflects that people not only come to these baths from Russia, but that the water, in stone bottles, merely as a cosmetic, is sent to St Petersburg and other distant parts of Europe, he will admit that it must be soft indeed to have gained for itself such an extraordinary degree of celebrity—for there is no town at Schlangenbad, not even a village; nothing, therefore, but the real or fancied charm of the water could attract people into a little sequestered valley, which, in every sense of the word, is out of sight of the civilised world; and yet, I must say that I never remember to have existed in a place which possessed such fascinating beauties; besides which (to say nothing of breathing pure dry air), it is no small pleasure to live in a skin which puts all people in good humour—at least with themselves. But besides the cosmetic charms of this water, it is declared to possess virtues of more substantial value: it is said to tranquillise the nerves, to soothe all inflammation; and from this latter property, the cures of consumption which are reported to have been effected, among human beings and cattle, may have proceeded. Yet whatever good effect the water may have on this insidious disorder, its first operation must certainly must be to neutralise the bad effects of the climate, which to consumptive patients must decidedly be a very severe trial; for, delightful as it is to people in robust health, yet the keenness of the mountain air, together with the sudden alternations of temperature to which the valley of Schlangenbad is exposed, must, I think, be any thing but a remedy for weak lungs." With respect to the precise influence of the water on the body—"it is, in my opinion (continues the same writer), a sort of corrosion which removes tan, or any other artificial covering that the surface may have attained from exposure and ill treatment by the sun and wind. In short, the body is cleaned by it just as a kitchen-maid scours her copper saucepan; and the effect being evident, ladies modestly approach it from the most remote parts of Europe."

Wishing every success to those among our fair readers who may make the attempt to preserve the beauty of their complexions by a dip in the wonder-working waters of Schlangenbad, we proceed on our way to Langen-Schwalbach, where we propose to set up our staff of rest for the night. The sun had just sunk behind the western hills as our calash drove

down the steep winding road that conducts us into the valley in which this secluded village with its famed brunnaens are situated. Agreeably to a previous recommendation, we took up our quarters at the Allée-Saal, or Hotel du Promenade, a house of enormous size, situated on a woody bank at the head of the village. Here, though crowded with inmates, there was a degree of repose which one might search for in vain in Wiesbaden. Yet here, also, in the principal saloon, was there placed a rouge-et-noir table, glittering with its heaps of gold and silver, and surrounded by a few players—a circumstance which showed us pretty plainly that gambling forms one of the peculiar attractions of the brunnaens of Nassau.

On the morning after our arrival, we rose with the early dawn, in order to explore betimes, ere the visitors awakened from their slumbers, the whole mechanism of Langen-Schwalbach. But here I must stop for the meanwhile; my space is exhausted; and it will not be for a week to come that I can introduce the reader to what met my eyes in the course of our ramble.

SNAKES AND SNAKE-CHARMERS.

It is only on visiting, and residing for a time in India, that one can become thoroughly sensible of the immense benefit conferred by St Patrick upon Ireland, when he preached his famous

"varmin,
That gave the frogs and toads a twist,
And banished all the varmin."

among which we may reasonably include *snakes* of all kinds and degrees. To new-comers in Hindostan, and particularly to those of nervous temperament, these creatures constitute a source of perpetual alarm. Their numbers are immense, and no place is sacred from their visitations. Just fancy the agreeable surprise resulting from such little occurrences as the following, which are far from being rare. You get up in a morning, after a feverish night perhaps; languidly you reach for your boots, and upon pulling on one, feel something soft before your toes, and on turning it upside down, and giving it a shake, out pops a small snake of the carpet tribe (as they are called, probably from their domestic propensities), wondering what can be the cause of his being thus rudely ejected from his night's quarters. Or suppose, at any time during the day, you should be musically inclined; you take your flute from its resting-place, and proceed to screw it together, but find, on making an attempt to play, that something is the matter, and on peeping into it, discover that a little serpentine gentleman has there sought and found a snug lodgement. Perhaps your endeavour to give it breath with your mouth makes Mr Snake feel his habitation in the instrument uncomfortably cold, and, ere you are aware of his presence, he is out, and wriggling among your fingers.

Such incidents as these cause rather unpleasant starts to those who are new to Hindostanic matters, though the natives of the land, or persons who had been long resident in it, might only smile at the new-comer's uneasiness, and tell him that these little intruders were perfectly harmless. But even with the assurance of this fact, it is long ere most Europeans can tolerate the sight and presence of these snakes, much less feel comfortable under their cold touch. Besides, it is but too well known that all these creatures are not innoxious. Well do I remember the fright that one poor fellow got in the barracks at Madras. He had possibly been indulging too freely over night; at least, when he rose in the morning in question, he felt thirsty in the extreme. Yawning most volitionally, he made up to one of the room windows, where stood a large water bottle or jar, one of those long-necked clay things in which they usually keep fluids in the east. Upon taking this inviting vessel into his hands, he observed that there seemed to be but little water in it, yet enough, as he thought, to cool his parched throat; and he had just applied it to his lips, when something touched them—certainly with you, if you dinna meddle with them; see I just let it crawl as it liket." "Well, my lad, I believe you did what was best after all, but it was what not one man in a thousand could have done." When the story was told, and the snake shown to the commanding officer, he thought the same, and Jock, for his extraordinary nerve and courage, got a remission of his punishment. For some time, at least, he took care how he again got into such a situation as to expose him to the chance of passing another night with such a bed-fellow.

It has frequently been asserted that the most tremendous of the snake tribe, the boa-constrictor, does not now exist in Hindostan, and has not done so for a considerable time. This statement is to be taken with some reservation. When our Anglo-Indian army were called to the field a few years ago, to teach a lesson to an obstinate native potentate, two of our soldiers left a temporary encampment of the troops, in order to indulge in a bath. They had a portion of jungle to cross, and, in doing so, the foot of one of them slipped into a sort of hole. This proved to be an old elephant-trap; that is to say, a pit of considerable size dug in the earth, and covered over with branches, sticks, and such like matters, so as to deceive the wild elephant into placing his mighty weight upon it, when he sinks, and is unable to get out again. The soldier got his foot withdrawn from the trap, though at the cost of his shoe, which the closeness of the branches caused to come off. Little did the poor fellow know at the moment what a fate he had narrowly escaped! But he

one of those hardy reckless beings on whom privation and suffering seem to make no impression. A hard floor was as good as a down-bed to Jock, and therefore, as he never scrupled to sell what he got, it may be supposed that his sleeping furniture was none of the most abundant or select. Such as it was, he was stretched upon and under it one night in his cell, during his term of penance, and possibly was reflecting on the impropriety of in future putting "an enemy into his mouth to steal away his brains," when, lo! he thought he heard a rustling in the cell, close by him. At this moment he recollected that he had not, as he ought to have done, stopped up an air hole, which entered the cell on a level with its floor, and also with the rock, externally, on which the building was planted. A strong suspicion of what had happened, or was about to happen, came over Hall's mind, but he knew it was probably too late to do any good, could he even find the hole in the darkness, and get it closed. He therefore lay still, and in a minute or two heard another rustle close to him, which was followed by the cold slimy touch of a snake upon his bare foot! Who in such a situation would not have started and bawled for help! Jock did neither; he lay stone still, and held his peace, knowing that his cries would most probably have been unheard by the distant guard. Had his bed-clothes been more plentiful, he might have endeavoured to protect himself by wrapping them closely around him, but this their scantiness forbade. Accordingly, being aware that, although a motion or touch will provoke snakes to bite, they will not generally do it without such incitement, Jock held himself as still as if he had been a log. Meanwhile, his horrible bed-fellow, which he at once felt to be of great size, crept over his feet, legs, and body, and, lastly, over his very face. Nothing but the most astonishing firmness of nerve, and the consciousness that the moving of a muscle would have signed his death-warrant, could have enabled the poor fellow to undergo this dreadful trial. For a whole hour did the reptile crawl backwards and forwards over Jock's body and face, as if satisfying itself, seemingly, that it had nothing to fear from the recumbent object on its own part. At length it took up a position somewhere about his head, and went to rest in apparent security. The poor soldier's trial, however, was not over. Till daylight, he remained in the same posture, flat on his back, without daring to stir a limb, from the fear of disturbing his dangerous companion. Never, perhaps, was dawn so anxiously longed for by mortal man. When it did come, Jock cautiously looked about him, arose noiselessly, and moved over to the corner of his cell, where there lay a pretty large stone. This he seized, and looked about for the intruder. Not seeing the snake, he became assured that it was under his pillow. He raised the end of this just sufficiently to get a peep of the creature's crest. Jock then pressed his knee firmly on the pillow, but allowed the snake to wriggle out its head, which he battered to pieces with the stone. This done, the courageous fellow for the first time breathed freely.

When the hour for breakfast came, Jock, who thought little about the matter after it was fairly over, took the opportunity of the opening of the door to throw the snake out. When the officer whose duty it was to visit the cells for the day, was going his rounds, he perceived a crowd around the cell-door examining the reptile, which was described by the natives as of the most venomous character, its bite being invariably and rapidly mortal. The officer, on being told that it had been killed by a man in the adjoining cell, went in and inquired into the matter. "When did you first know that there was a snake in the cell with you?" said he. "About nine o'clock last night," was Jock's reply. "Why didn't you call to the guard?" asked the officer. "I thought the guard wadna hear me, and I was feared I might tramp on't, so I just lay still." "But you might have been bit; did you know that you would have died instantly?" "I kent that very weel," said Jock, "but they say that snakes winna meddle with you, if you dinna meddle with them; see I just let it crawl as it liket." "Well, my lad, I believe you did what was best after all, but it was what not one man in a thousand could have done." When the story was told, and the snake shown to the commanding officer, he thought the same, and Jock, for his extraordinary nerve and courage, got a remission of his punishment. For some time, at least, he took care how he again got into such a situation as to expose him to the chance of passing another night with such a bed-fellow.

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soon became sensible of it. On looking down to see whether his shoe was gone, and if it was recoverable, he beheld a sight, which, but for the hold he had of his companion's arm, would have made him yet totter into the pit from sheer horror. Through the opening made by his foot, he saw an enormous boa-constrictor, with its body coiled up, and its head curved, watching the opening above, and evidently prepared to dart on the falling prey. Hurrying from the spot, the two soldiers informed some of their officers, who immediately came to the trap with fire-arms. The creature was still there, and, indeed, had most probably remained in the place for a length of time, preying on the unfortunate animals, great and small, which tumbled into its den. Ball and swan-shot, both used at once, brought the reptile's life to a close, and it was got out of the hole. It proved to be fifteen feet long, and about the general thickness of a man's thigh. The skin and scales were most beautiful. It was intended to make two cases of the skin, for holding the regimental colours, and would have been large enough for the purpose. But it was entrusted to unskilful hands, and got withered and wasted in the preparation.

The Hindoos, or at least the serpent-charmers among them, pretend, as is well known, to handle all sorts of snakes with impunity, to make them come and go at a call, and, in short, to have a cabalistic authority over the whole race. These pretensions are necessary to the exercise of their profession, which consists, in part, in ridding private houses of troublesome visitants of this description. One of these serpent-charmers will assert to a householder that there are snakes about his premises, and, partly from motives of fear and partly from curiosity, the householder promises the man a reward, if he succeeds in showing and removing them. The juggler goes to work, and soon snakes are seen to issue from some corner or another, obedient to his call. The performer takes them up fearlessly, and they meet like old friends. In fact, the opinion of the more enlightened residents in India is, that the snakes and their charmer are old friends; that he hid them there, and, of course, knew where to find them; and, moreover, that having long ago extracted the poisonous fangs, he may well handle them without alarm. Still, a large portion of the community, Europeans as well as natives, believe that these charmers have strange powers over the snake tribe. In Madras, however, while I was there, this belief received a sad shake by a circumstance which occurred. One of the most noted serpent-charmers about the district chanced one morning to get hold of a cobra, of considerable size, which he got conveyed to his home. He was occupied abroad all day, and had not time to get the dangerous fang extracted from the serpent's mouth. This, at least, is the probable solution of the matter. In the evening he returned to his dwelling, considerably excited with liquor, and began to exhibit tricks with his snakes to various persons who were around him at the time. The newly caught cobra was brought out with the others, and the man, spirit valiant, commenced to handle the stranger like the rest. But the cobra darted at his chin, and bit it, making two marks like pin points. The poor juggler was sobered in an instant. "I am a dead man," he exclaimed. The prospect of immediate death made the maintenance of his professional mysticism a thing of no moment. "Let the creature alone," said he to those about him, who would have killed the cobra; "it may be of service to others of my trade. To me it can be of no more use. Nothing can save me." His professional knowledge was but too accurate. In two hours he was a corpse!

I saw him a short time after he died. His friends and brother jugglers had gathered around him, and had him placed on a chair in a sitting position. Seeing the detriment likely to result to their trade and interests from such a notion, they vehemently asserted that it was not the envenomed bite which had killed him. "No, no; he only forgot one little word—one small portion of the charm." In fact, they declared that he was not dead at all, but only in a sort of swoon, from which, according to the rules of the cabalistic art, he would recover in seven days. But the officers of the barracks, close to which the deceased had lived, interfered in the matter. They put a guard of one or two men on the house, declaring that they would allow the body to remain unburied for seven days, but would not permit any trickery. Of course, the poor serpent-charmer never came to life again. His death, and the manner of it, gave a severe blow, as has been already hinted, to the art and practice of snake-charming in Madras.

THE DEAD LANGUAGES.

The custom of Plutarch's time was very different from those of ours, where the greatest part of our youth is spent in learning the words of dead languages. The Grecians, who thought all barbarians but themselves, despised the use of foreign languages, so that the first elements of their breeding was the knowledge of nature, and the accommodation of that knowledge, by moral precepts, to the service of the public and private offices of virtue. By this liberal sort of education, study was so far from being a burden to them, that in a short time it became a habit; and philosophical questions and criticisms of humanity were their usual recreations at their meals. Boys lived then as the better sort of men do now, and their conversation was so well bred and manly, that they did not plunge out of their depth into the world when they grew up, but slid easily into it, and found no alteration in their company.—Dryden.

MOVEMENT FOR THE EARLIER SHUTTING OF SHOPS.

OUR short note on this subject in the publication of the 5th January has brought us a communication from the Committee of the *Association of Drapers' Assistants* (of the city of London) for shortening the *Hours of Business*; from which we learn, that "although a considerable number of employers have expressed their sense of the utility and practicability of closing their shops at the hours requested by the assistants, yet, in consequence of its being necessary for the interest of those parties that the practice should be universal, the object which was sought has not been attained." Our correspondents add, that they have nevertheless been in some degree rewarded for their exertions, by seeing much good result from them elsewhere. "The question which was first raised by them has since been agitated not only in their own trade, but in almost every other, and not only in London, but in almost every considerable town in England. The result has been in some cases the establishment of the hours sought for, and in nearly all cases that of an earlier hour than had hitherto been customary." This is so far gratifying; and we would hope that, in a little time, it may be found possible to effect the same reform in London, an agreement of the principal houses as to a particular hour being all that is necessary for that purpose.

The Committee request us to give a more particular account of the institution from which the shop-keeping classes in Edinburgh derive the benefits of literary and scientific knowledge after the hours of business are closed. It was established about seven years ago, and the movement for an earlier shutting of shops took place about the same time, as a necessary means of enabling the business classes to attend. Men in trade, whether as principals or assistants, may be said to constitute the nine-tenths of the association, and the business is managed by a committee of the members, without any aid from, or connection with, persons of a more elevated grade. From three to six series of lectures are delivered during the course of every winter. Several hundred persons pay a guinea each, for which they are entitled to attend all the lectures that may be delivered; others take tickets for particular courses only, while there is also an occasional attendance, for which sixpence of admission-money is charged. Altogether, the association usually disposes of funds to the amount of four or five hundred pounds per annum. The usual hour of shop-shutting being eight, the lectures commence at half past, and last rather longer than an hour. They take place every evening excepting Saturday, each lecturer having one or more evenings for his particular subject. Chemistry, Geology, Astronomy, Electricity and Galvanism; Natural History, Human Physiology; Phrenology; Moral Philosophy, History; Musical Harmony; the Fine Arts; are among the subjects which have been treated, the lecturers being usually very respectable of their kind, though paid in rather a sparing manner. Females form a portion of the audience.

In Glasgow, associations of the working and shop-keeping classes for hearing lectures are numerous. Our readers will recollect the description given in the *Journal* of the 10th of November, of one which took its rise in a conviction on the part of the advocates of "total abstinence," that some social amusement of an innocent kind was required as a substitute for the vicious ones newly given up. We lately had an opportunity of witnessing a meeting of this body. A large hall was densely crowded by working-men and females, all in decent guise, and on a platform stood a square piano-forte, beside which sat several persons, apparently the directors of the amusements. We heard two comic songs given by amateurs of the operative order, and a beautiful duet from two others: The enjoyment of the audience, who might be five hundred in number, seemed intense. This weekly musical meeting of the working-classes, which costs only twopenny to each person, has been initiated by an association of the trading-class, who meet in the *Trades' Hall*, and pay sixpence each. Here a lecture of a philosophical nature is delivered, lasting rather less than an hour; after which there is a series of musical performances, vocal and instrumental, and of recitations. The addition of musical to philosophical entertainment seems to us a judicious step; and we hope that the plan will be followed elsewhere.

Since our notice of the Glasgow association in November, we have heard of the establishment of similar societies in different country towns in Scotland, chiefly through the activity of Mr McPherson from Glasgow, who has been most zealous in promoting their extension. Among other places, we may mention Dunfermline and Kirkcaldy, both busy and intelligent seats of population in Fife; also Linlithgow, a respectable old burgh in West Lothian. Some efforts, we believe, have likewise been made in Edinburgh to establish cheap musical entertainments of a similar nature, though we have not yet heard of their permanent organisation. There cannot be the least doubt of the success of such associations, so long as they are sustained on a perfectly respectable but unpretending footing, suitable both to the feelings and the pockets of the class for whom they are intended. We may add, that gentlemen amateur players, of whom there are always a certain number in every town, might render no small assistance to such institutions by occasionally affording their gratuitous services.

All of the associations that we have ever heard of are doing good, while in none is there any feature that calls for disapprobation. In fact, they are part, and an important part, of a great movement now going on for the improvement of mankind and the lessening of human pains and sorrows. Let us not forget that, as a preliminary to their very existence, a shortening of the hours of business is in most places necessary. To this cause, then, we heartily wish success: may it be early and complete, and may it be lasting!

NEW USES FOR TURF.

We have found the following account of the value of turf as applied to the arts, in an Irish paper—the *General Advertiser* of Dublin:—

"Ireland has a valuable resource for its reviving industry in its abundant supply of turf. It has been stated that turf could be had on some of the great inland waters of Ireland at 1s. a ton; but let us suppose that good mountain turf could be had for 2s. a ton, two tons of such may make about one ton of charcoal. Turf is charred in Ireland by two methods. The horse-shoers, in those parts of Ireland where coal is much enhanced by carriage, make turf charcoal in small quantities as they want it: a cone of dry turf is built on hard ground, covered partly with dust—it is then inflamed, closed up with dust, and extinguished by water. But on the Mourne mountains and in Roscommon, a chamber is dug in the bog, filled with dry turf, which, when sufficiently inflamed, is smothered by the wet stuff thrown out to form the chamber in which the charcoal was formed. This process produces a greater quantity of charcoal than the former method, and more cheaply. Two tons of turf, which will make one ton of charcoal, may be had in some places in Ireland for four shillings, whereas a ton of wood charcoal, at the great iron-works in Gloucestershire for instance, will cost four pounds. To compare the prices of these fuels in the British market, we must add the expense of charring and freight to the first cost of that from the Irish turf; still the Irish charcoal will in most places be much lower than the British wood charcoal. But is it as good? Not for the use of the high furnaces which go from forty-five to sixty-five feet of elevation. The pressure of the contents of the high furnace acting on the copious ashes of turf or turf charcoal, may obstruct the draught; but in the processes of refining bar-iron, and in the making of steel, I suppose it to be as good. But charcoal of any kind is not used in many of the high furnaces of Great Britain. In the four great processes by which iron is brought from the ore to finished bar-iron, namely, fusing, refining, puddling, and reheating, one hundred tons of finished bars requires a thousand tons of coals, for four hundred and thirty of which, turf or turf charcoal may be substituted. Under the boilers of the steam-engines that supply power either for blowing the fires, shaping the metal, or for the production of other necessary forces, the use of coals or coke seems unobjectionable; but wherever the fuel and metal are in contact, charcoal gives a better metal than coal or coke, being free from sulphur and other contaminations. The processes for making refined iron and steel enhance the value so much, that refined iron is double the price of cast iron, and the best cast steel has its value increased in a far greater proportion. In all these processes, charcoal must be preferred to coke, and this, next to the quality of the ore, is a chief cause of the superiority of the Swedish over the British iron. Some of the iron-masters of Britain are well aware of the value of turf fuel. The proprietor of a large work in Gloucestershire bought an estate containing turf bog to supply his works: the plan, however, was laid aside, from the difficulty of transport. We have five millions of acres of waste land. Let us suppose half of these are covered with turf bog from one to twenty feet deep, having a specific gravity a little less than water, and containing, probably, four to six parts water, to one of inflammable matter. Of what immense value, then, is the turf we possess and neglect! It could not be all converted into charcoal in a few years; no, and so much the better. But much more turf might be made than can be on the present system, if a plan mentioned in an early number of the *Journal des Mines* was adopted. Turf partially dried was thrown, without order, into a house which was adapted for the communication of heat without flame, and the escape of vapour; in which it was exposed to the heat of 200 degrees Fahrenheit, and rapidly dried; thus the preparation of turf might become a continual employment, independent of season or weather. We therefore command a vast supply of a fuel nearly as valuable as the best used in the British iron-works, and in some situations cheaper than the worst. I have heard that there are extensive iron-works in England where the coals cost more at the mouth of the furnace than 12s. per ton.

In the year 1827, iron was made in Great Britain in 284 furnaces, to the extent of 690,000 tons, which being converted partly into castings, and partly into bars, rods, and plates of malleable iron, was worth £6,290,000. It has greatly increased since. 240 vessels freighted with iron articles sailed from England to America in less than twelve months after the great fire in New York. Here is abundance of fuel in Ireland, and demand in England; how are they to meet? By cheap railroads from the turf mountains to water carriage. The Americans make railroads for £1,000 a mile; we have labour and iron cheaper than they, but it is better to imitate them than the British, who can afford to spend £70,000 per mile on railroads. Where should they first be made? From Dublin to near Lough Bray, where, before the military road was begun, a ten-foot rod was driven into the bog with little resistance. The turf might be conveyed to Dublin by a railroad, and thence to Liverpool; the waggons may descend by their own weight to Rathfarnham, and draw up lime, tools, and industrious hands to cultivate one hundred square miles of neglected valuable mountain, adjoining a city where many thousand good labourers are perishing for want of employment.

There will be also a demand for turf, charred or not, for the steam-boats. By this fuel the heat can be expeditiously raised. In London, charcoal is sold for lighting fires. In conservatories, turf charcoal has been found by the Dutch preferable to wood charcoal, when used in open braziers, so as to warm the house without the expense of flues. It was said to answer particularly with orange trees. From a series of four experiments which were made, as detailed in the *Annales des Mines*, and also from experiments carefully made in this country by Dr Stokes, it was found that the calorific power of charcoal made from peat was equal to that of wood charcoal. The experiment by Dr Stokes was the evaporation of a certain quantity of water, by the two descriptions of fuel, in the same apparatus, and under the same circumstances."

A PICTURE OF WAR.

I shall select but one description of a battle scene amongst the myriads which present themselves on every hand. It is from "Napier's History of the Peninsular War," and relates to the scene after the storming of Badajoz:—"Now commenced that wild and desperate wickedness which tarnished the lustre of the soldier's heroism. Shameless rapacity, brutal intemperance, savage lust, cruelty and murder, shrieks and piteous lamentations, groans, shouts, imprecations, the hissing of fires bursting from the houses, the crashing of doors and windows, and the reports of muskets used in violence, re-sounded for two days and nights in the streets of Badajoz! On the third, when the city was sacked, when the soldiers were exhausted by their excesses, the tumult rather subsided than was quelled, the wounded were then looked to, the dead disposed of! Five thousand men and officers fell during the siege, and of these, including seven hundred Portuguese, three thousand five hundred had been stricken in the assault. Let any man picture to himself this frightful carnage taking place in a space of less than a hundred yards square. Let him consider that the slain died not all suddenly, nor by one manner of death; that some perished by steel, some by shot, some by water, that some were crushed and mangled by heavy weights, some trampled upon, some dashed to atoms by the fiery explosions; that for hours this destruction was endured without shrinking, and that the town was won at last; let any man consider this, and he must admit that a British army bears with it an awful power." I may fairly ask, did Christianity ever contemplate such a scene as this? The wounded were three days and nights bleeding to death—and so were they at Waterloo; and I am entitled to ask, where was it not so?

Cold was the bed where many a graceful form
That day was stretched by death's relentless storm;
In heaps they lay, and agonised with pain,
Piled with the corpses of their comrades slain.
No heart, affectionate and kind, was there,
To soothe their spirits with a parting prayer;
No watchful eye beheld their final hour,
Save that All-seeing and Almighty Power,
Before whose judgment-seat they took their stand,
War in their heart and vengeance in their hand.

—From a Speech at the Peace Society's Meeting.

ABSURDITIES.

To attempt to borrow money on the plea of extreme poverty.—To lose money at play, and then fly into a passion about it.—To ask the publisher of a new periodical how many copies he sells per week.—To ask a wine merchant how old his wine is.—To make yourself generally disagreeable, and wonder that nobody will visit you, unless they gain some palpable advantage by it.—To get drunk, and complain the next morning of a headache.—To spend your earnings on liquor, and wonder that you are ragged.—To sit shivering in the cold because you won't have a fire till November.—To suppose that reviewers generally read more than the title-page of the works they praise or condemn.—To judge of people's piety by their attendance at church.—To keep your clerks on miserable salaries, and wonder at their robbing you.—Not to go to bed when you are tired and sleepy, because "it is not bed time."—To make your servants tell lies for you, and afterwards be angry because they tell lies for themselves.—To tell your own secrets, and believe other people will keep them.—To render a man a service voluntarily, and expect him to be grateful for it.—To expect to make people honest by hardening them in a jail, and afterwards sending them adrift without the means of getting work.—To fancy a thing is cheap because a low price is asked for it.—To say that a man is charitable because he subscribes to an hospital.—To keep a dog or a cat on short allowance, and complain of its being a thief.—To degrade human nature in the hope of improving it.—To praise the beauty of a woman's hair before you know whether it did not once belong to somebody else.—To expect that your tradespeople will give you long credit if they generally see you in shabby clothes.—To arrive at the age of fifty, and be surprised at any vice, folly, or absurdity, their fellow-creatures may be guilty of.—*Newspaper paragraph.*

HEALTH OF LONDON.

Although London stands low, in point of salubrity, in comparison with the provinces of England, it stands very high when compared with most of the continental cities, and even states. With all the boasted advantages of the climate on the Mediterranean shores, the settled salubrious seasons of France, the glowing atmosphere and serene blue sky of Italy, we find England, and even its gigantic, crowded, and almost boundless metropolis, enjoying a greater share of health, and consequently possessing a higher value of life, than the inhabitants of almost any foreign city or state in Europe, or perhaps in the world. It stands with respect to Paris in the scale of health, as 40 to 32; to Leghorn as 40 to 35; to Naples as 40 to 28; to Rome as 40 to 24; and to Vienna as 40 to 22. The mortality in the latter city being as high as 1 to 22, or in other words, nearly five per cent. of the whole population die annually.—*London as it is.*

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